

## Appendix C.

# Statistical Methodology

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### MAIL LIST MODEL

Classification analysis was performed to predict the probability that an addressee on the 1992 mail list operated a farm, and thereby separated the preliminary mail list into probable farm and probable nonfarm classes. The analysis was used to reduce the preliminary census mail list of 3.78 million records to a final mail list size of 3.55 million records. All 3.55 million addresses on the final mail list received a census of agriculture report form.

Records from the 1987 final census mail list were used to build a 1992 prediction model for the 1992 analysis. Classification and Regression Trees (CART) software analyzed characteristics of known 1987 farm and nonfarm operations to determine which were most useful in predicting farm and nonfarm classes. Record characteristics such as the source of the mail list record, number of source lists on which the record appeared, expected value of agricultural sales, and geographic location were used to separate mail list records into model groups. (Sources included the previous agriculture census mail list, the Internal Revenue Service administrative records, U.S. Department of Agriculture, and special commodity lists.) The proportion of 1987 census farm records in each model group was calculated to provide an estimate of the probability that an addressee in the group operated a farm.

After the model groups were defined, each address record on the 1992 preliminary mail list was assigned to a model group by matching record characteristics to model group characteristics. Records belonging to the groups with the highest farm probability were those more likely to be farms according to the classification tree methodology. The model, followed by analyst reviews, was used to remove 229,700 records from the preliminary mail list (those in model groups with the lowest farm probability), and thereby designated the 3.55 million records with the highest farm probability to receive the census report form. This procedure was used to obtain a more complete census enumeration of farm operations without excessive respondent burden and data collection cost.

### CENSUS SAMPLE DESIGN

Each of the 3.55 million name and address records on the census mail list was designated to receive one of three different types of census report forms. The three forms were the nonsample form, the screener form, and the

sample form. Sections 1 through 20 and 27 through 32 of the sample form are identical to sections on the nonsample form. The sample form, sections 21 through 26, contains additional questions on usage of fertilizers and chemicals, farm production expenditures, value of machinery and equipment, value of land and buildings, and farm-related income. The screener form is identical to the nonsample form with questions added in section 1 to allow quick identification of nonfarm addresses. These three different forms were used to reduce the response burden of the census, while providing reliable information on a large number of data items.

The sample form was mailed to all mail list records in Alaska, Hawaii, and Rhode Island, and to a sample of records in other States selected from the final mail list. Addresses were selected into the sample with certainty (1) if they were expected to have large total value of agricultural products sold or large acreage, (2) if they were multiunit operations (i.e., separate farms in more than one location), (3) if they had other special characteristics, or (4) if they were in a county with less than 100 farms in 1987. Other addresses in counties containing 100 to 199 farms in 1987 were systematically sampled at a rate of 1 in 2, and other addresses in counties containing 200 farms or more in 1987 were systematically sampled at a rate of 1 in 6. This differential sampling scheme was used to provide reliable data for the sample sections of the report form for all counties. When a nonsample large farm was identified during processing, a supplemental form that contained the additional sample data inquiries was mailed.

To determine which mail list records would receive the screener form, all mail list records not designated for the sample were sorted by model group farm probability as specified by the mail list model. The 412,000 mail list records in the model groups with the lowest probability of being farms and with an expected total value of agricultural product sales less than \$25,000 were designated to receive the screener report form. The remaining mail list records received the nonsample report form.

### CENSUS ESTIMATION

The 1992 Census of Agriculture used two types of statistical estimation procedures. These estimation procedures accounted for nonresponse to the data collection and for the sample data collection. These procedures are necessary because some farm operators never respond to

the census despite numerous attempts to contact them, and the estimates for the sample data are based on a sample of farm operators rather than a full enumeration.

## Whole Farm Nonresponse Estimation

A statistical estimation procedure was used to account for nonrespondent farm operators to the census. We excluded large and unique farm operations that received intensive telephone followup during census processing, assuming complete response from them. A stratified systematic sample of remaining census nonrespondents were contacted by enumerators using a computer-assisted telephone interview system. Five sample strata were defined based on expected value of sales, previous census status, and whether the record was identified by the mail list model to receive the screener report form. The nonresponse survey telephone interview was designed to provide sufficient information to determine the farm status of each record.

In situations where the nonresponse survey case could not be contacted, the contact person refused to cooperate, or when no phone number could be obtained, a screener report form was sent by certified mail.

Estimates of the proportion of census nonrespondents that operated farms were made for each stratum in the State using survey results and applied to the total number of census nonrespondents in that stratum. The number of census nonrespondents that operated farms for each county by stratum was then derived. This estimation procedure is based on the assumption that the distribution of farms in a stratum by county is the same for census nonrespondents as for census respondents.

Certain census respondent farms which exhibited "rare" commodities were designated as "ineligible" to represent census nonrespondent farms and were excluded from the nonresponse weighting operation. The procedure explained below was performed with only the eligible respondent cases: Within each stratum in a county, a noninteger nonresponse weight was calculated and assigned to each eligible respondent farm record. The noninteger nonresponse weight is the ratio of the sum of the estimated number of nonrespondent farms from the nonresponse survey and the number of eligible census respondent farms to the number of eligible census respondent farms. Stratum controls were established to ensure that this weight was never greater than 2.0. The noninteger nonresponse weight was used in the calculation of the final weight for the sample items. The noninteger nonresponse weight was randomly rounded to an integer weight of either 1 or 2 for each record for tabulating the complete count items for publication.

Table A quantifies the effect of the nonresponse estimation procedure on selected census data items. The percentages in these tables are the percents of the census values contributed by nonresponse estimation. These indicate the potential for bias in published figures resulting from nonresponse to the census. The estimates provided

in these tables do not reflect the effect of item nonresponse to individual census data items. The effect of item nonresponse is discussed in the Census Nonsampling Error section.

**Table A. Percent of State Totals Contributed by Whole Farm Nonresponse Estimation: 1992**

Item	Percent of total
Farms ..... number.	15.3
Land in farms ..... acres.	9.2
Estimated market value of land and buildings <sup>1</sup> ..... \$1,000.	4.3
Market value of agricultural products sold ..... \$1,000.	3.4
Harvested cropland ..... acres.	7.1
Corn for grain or seed ..... acres.	6.7
Wheat for grain ..... acres.	6.1
Livestock and poultry inventory:	
Cattle and calves ..... number.	10.6
Hogs and pigs ..... number.	1.0
Hens and pullets of laying age ..... number.	3.6

<sup>1</sup>Data are based on a sample of farms.

## Sample Estimation

Sample data estimates the population totals that would have resulted from a complete census for the items in sections 21 through 26 of the sample report form. The estimates were obtained from a ratio estimation procedure that resulted in the assignment of a weight to each respondent record containing sample items. For any given county, a sample item total was estimated by multiplying the data items for each farm in the county by the corresponding sample weight and summing over all sample records in the county.

Each respondent sample farm was assigned a sample weight for use in producing estimates for all sample items. For example, if the weight given to a sample farm had the value 6, all sample data items reported by that farm would be multiplied by 6. The weight assigned to a sample certainty farm was 1.

Other than certainty farms, within a county, the ratio estimation procedure for farms was performed in three steps using three variables. The first variable contained eight 1992 total value of agricultural production (TVP) groups. Both the second and third variables, Standard Industrial Classification (SIC) code and farm acreage, contained two groups. The three sets of groups were as follows:

TVP	SIC	Acres
\$1 to \$999	01 All crops	1 to 69
\$1,000 to \$2,499	02 All livestock	70 or more
\$2,500 to \$4,999		
\$5,000 to \$9,999		
\$10,000 to \$24,999		
\$25,000 to \$49,999		
\$50,000 to \$99,999		
\$100,000 or more		

The first step in the estimation procedure was to classify the sample records into 32 mutually exclusive initial post strata formed by the three sets of groups. The total and sample farm counts were expanded to account for nonresponse. Each cell containing sample farm records was assigned an initial sample weight equal to the ratio of the total farm count to the sample farm count. This weight was approximately equal to the inverse of the probability of selecting a farm for the census sample.

The second step in the estimation procedure was to combine, if necessary, the 32 initial post strata to increase the reliability of the ratio estimation procedure. Any stratum that contained less than 10 sample farms after nonresponse adjustment or had a weight greater than two times the mail sample rate was collapsed with another stratum. The mail sample rate was either 2 or 6, depending on whether the county had a 1 in 2 or 1 in 6 sample selection rate. The collapsing occurred within the initial 32 post strata according to a specified collapsing pattern. After the collapsing process was completed, new total farm counts and sample farm counts were computed from each of the final post strata and were used to calculate final sample weights.

The final step consisted of assigning the noninteger final post stratum weight to the sample farm records in each post stratum. The weight is the ratio of total farm count to sample farm count in each final post stratum. The noninteger sample weight, the product of the noninteger final post stratum weight and the nonresponse weight, was randomly rounded to an integer weight for tabulation. If, for example, the final weight for the farms in a particular post stratum was 7.2, then 0.2 or one-fifth of the sample farms in this post stratum were randomly assigned a weight of 8 and the remaining four-fifths received a weight of 7.

## CENSUS SAMPLING ERROR

The sample for the 1992 Census of Agriculture is only one of a large number of possible samples of the same size that could have been selected using the same sample design. Sample refers to the sample for both the nonresponse survey and the selection of farms to receive the sample report forms. Estimates derived from all the possible samples would differ from each other only by random variation.

The standard error or sampling error of a survey estimate is a measure of the variation among the estimates from all possible samples and thus is a measure of the precision with which an estimate from a particular sample approximates the average result of all possible samples. The percent relative standard error of an estimate is defined as 100 times the standard error of the estimate divided by the value of the estimate.

If all possible samples were selected, each of the samples were surveyed under essentially the same conditions, and an estimate and its standard error were calculated from each sample, then:

1. Approximately 90 percent of the intervals from 1.65 standard errors below the estimate to 1.65 standard errors above the estimate would include the average value of all possible samples.
2. Approximately 95 percent of the intervals from 1.96 standard errors below the estimate to 1.96 standard errors above the estimate would include the average value of all possible samples.

The following example illustrates the computations necessary for producing a confidence interval for an estimate. Assume that the estimate of number of farms for a State is 94,382 and the relative standard error of the estimate is .1 percent (0.001). Multiplying 94,382 by 0.001 yields 94, the standard error; therefore, a 90-percent confidence interval is 94,227 to 94,537 (i.e., 94,382 plus or minus 1.65 x 94). If corresponding confidence intervals were constructed for all possible samples of the same size and design, approximately 90 percent of these intervals would contain the figure obtained from a complete enumeration. Similarly, a 95-percent confidence interval is 94,198 to 94,566 (i.e., 94,382 plus or minus 1.96 x 94).

Census items were classified as either complete count or sample count items. Complete count items were asked of all farm operators. Examples of complete count items were land in farms, harvested cropland, livestock inventory and sales, crop acreage, quantities harvested and crop sales, land use, irrigation, government loans and payments, conservation acreage, type of organization, and operator characteristics.

Sample count items were asked only of a sample of farm operators. These items appeared only in sections 21 through 26 of the sample report form. Sample count items were included under the following section headings: commercial fertilizers, chemicals, production expenses, farm machinery and equipment, value of land and buildings, and farm-related income.

Variability, measured as percent relative standard error, in the estimates of complete count items is due only to the nonresponse survey estimation procedure. Variability in the estimates of sample count items is due to both the nonresponse survey estimation procedure and the census sample selection and estimation procedure. Thus, variability in the sample count item estimates tends to be larger than the variability in the complete count item estimates.

Table B provides the generalized reliability estimates of the estimated number of farms in a county reporting complete count and sample count items. The top half of the table shows the percent relative standard error for estimated number of farms in a county reporting a complete count item and the bottom half a sample count item. These are derived from regression equations. Separate regression equations were used for complete count items and sample count items. Each regression equation was fit with the estimated number of farms in a county reporting an item as the independent variable and the relative variance of that estimate as the dependent variable for all counties in the State. For sample count items, only data

from counties sampled at a rate of 1 in 6 are used in the estimation of the regression equation.

**Table B. Reliability Estimates for Number of Farms in a County Reporting a Complete Count Item or Sample Count Item: 1992**

Farms	Relative standard error of estimate (percent)
<b>COMPLETE COUNT ITEM</b>	
Number of farms reporting:	
25	6.0
50	3.8
75	2.6
100	1.8
150	1.5
200	1.3
300	1.1
500	.8
750	.7
1,000	.6
1,500	.5
2,000	(X)
<b>SAMPLE COUNT ITEM</b>	
Number of farms reporting:	
25	26.3
50	21.0
75	18.9
100	17.7
150	16.5
200	15.8
300	15.2
500	14.6
750	14.3
1,000	14.2
1,500	14.0
2,000	(X)

To illustrate the use of this table, assume that the estimate of the number of farms reporting hogs and pigs for a particular county, as given in county table 15, is 89. Since hogs and pigs is a complete count data item, refer to the first part of table B and use the estimated percent relative standard error of the estimate from the row with farm count equal to or just less than the estimated number of farms, 89. For this example, the percent relative standard error of the estimate comes from the row for 75 farms reporting. For sample count items, follow the same procedure using the second part of table B. For counties with fewer than 100 farms in the 1987 Census of Agriculture, variability in sample count item estimates comes only from nonresponse survey estimation procedures; thus, the estimated relative standard error for a sample count item in these counties may be obtained using the first part of table B.

Table C presents the percent relative standard error of selected State data items for all farms, and table D presents the percent relative standard error of selected State data items for all farms with sales of \$10,000 or more.

Table E presents the percent standard error for percent change in State totals from 1987 to 1992. The general

purpose of the percent change estimate is to provide a relative measure of the difference in a characteristic between censuses. The relative change for a given characteristic is defined as the ratio of the difference of the 1992 and the 1987 estimate for that characteristic to the 1987 estimate. This ratio is multiplied by 100 to obtain the percent change. The percent standard error of a percent change estimate, then, is the standard error of the ratio multiplied by 100.

Table F presents the percent relative standard error for State and county totals for selected data items. The percent relative standard error of the estimate for the same item differs among counties in the State. Reasons for this are differences among counties in (1) the total number of farms, (2) the number of large farms included with certainty, (3) the size classifications of the farms sampled, (4) the amount of nonresponse, (5) the general agricultural characteristics, and (6) the specific characteristic being measured.

## CENSUS NONSAMPLING ERROR

The accuracy of the census counts are affected jointly by sampling errors, described in the previous section, and nonsampling errors. Extensive efforts were made to compile a complete and accurate mail list for the census, to design an understandable report form with instructions, and to minimize processing errors through the use of quality control measures on specific operations. Nonsampling errors arise from incompleteness of the census mail list, duplication in the mail list, incorrect data reporting, errors in editing of reported data, and errors in imputation for missing data. These specific nonsampling errors are further discussed in this section. Evaluation studies will be conducted to measure the extent of certain nonsampling errors such as coverage error and classification error.

## Census Coverage

The main objective of the census of agriculture is to obtain a complete and accurate enumeration of U.S. farms with accurate data on all aspects of the agricultural operation. However, the high cost and availability of resources for enumeration place restrictions on feasible data collection methodologies. The past six agriculture censuses have been conducted by mail enumeration with telephone contact for selected nonrespondents. The completeness of such an enumeration thus depends to a large extent on the coverage of farm operations by the census mail list.

The past five censuses of agriculture have included approximately 91 percent of farms in the United States and approximately 96 percent of agriculture production. Complete enumeration of agricultural operations satisfying the farm definition of \$1,000 or more in agricultural sales is complicated by fluctuations in agricultural operations qualifying for enumeration, the variety of arrangements under which farms are operated, the multiplicity of names used

by an operation, the number of operations in which an operator participates, the accuracy of data reporting, and other factors. A new mail list is compiled for each census because no current single list of agricultural operations is comprehensive.

An evaluation of census coverage has been conducted for each census of agriculture since 1945. The evaluation provides estimates of the completeness of census farm count and major census data items. In addition, the evaluation helps to identify problems in the census enumeration and provide information that can form the basis for improvements. The results of the 1992 Coverage Evaluation program will be published in volume 2, Subject Series (Part 2): Coverage Evaluation.

The evaluation of coverage for the 1992 census was designed to measure four components of error in the census mail list and in farm classification. Mail list error includes two components of error, a measurement of farms not on the census mail list (undercount) and a measurement of farms enumerated more than once in the census (overcount). Classification error includes two components of error, a measurement of farms classified as nonfarms in the census (undercount) and of nonfarms classified as farms in the census (overcount). Classification error arises from reporting and processing errors. Mail list undercount dominates all coverage errors. Net coverage error is defined as the difference between undercounted and overcounted farms. Measurements of these errors, as well as a description of the complete coverage program, will be available in the Coverage Evaluation report.

## **Mail List Coverage**

A major problem with mail enumeration for the census of agriculture is the difficulty encountered in compiling a complete mail list. The percentage of farms included on the census mail list varies considerably by State. Several reasons have contributed to farm operator names not being included on the census mail list—the operation may have been started after the mail list was developed, the operation may be so small as not to appear in any of the agriculture-related source lists used in compiling the census list, or the operation may have been falsely classified as a nonfarm prior to mailout. A large proportion of the farms not included on the mail list are small in both acres and sales of agricultural products.

The 1992 Census of Agriculture Coverage Evaluation used the area segment sample of the 1992 June Agricultural Survey (JAS) of the National Agricultural Statistical Service (NASS) to estimate farms not on the census mail list. The Census Bureau contracted with NASS to augment the JAS data collection. The survey data collected by NASS will be protected under the confidentiality of title 13, U.S. Code. These JAS survey records were matched to the census mail list. Records that did not match were mailed a census of agriculture report form to estimate mail list

coverage. Estimates of farms not on the census mail list are computed using a capture-recapture dual frame estimator which will be described in the Coverage Evaluation report mentioned earlier.

Table G provides coverage evaluation estimates for one component of coverage error associated with the census of agriculture; that is, the error due to farms not on the census mail list. Also provided are estimates of selected characteristics of farms not on the mail list, estimates of characteristics of farms not on the mail list as a percentage of total farms in the State, and the percent relative standard error associated with each estimate. The estimate of total farms in the State is based on census farm count plus the estimated number of farms not on the census mail list. This estimate of total farms in the State was not adjusted for the components of error associated with classification and list duplication error. Estimates of these errors will be made at the regional, rather than the State level, and will be provided in the Coverage Evaluation report mentioned earlier.

## **Respondent and Enumerator Error**

Incorrect or incomplete responses to the mailed census report form or to the questions posed by a telephone enumerator introduce error into the census data. Such incorrect information can lead, in some cases, to incorrect classification of farms. This type of reporting error is measured by the Classification Error Survey discussed later in this section. To reduce all types of reporting error, detailed instructions for completing the report form were provided to each addressee. Questions were phrased as clearly as possible based on tests of the census report form and each respondent's answers were checked for completeness and consistency.

## **Item Nonresponse**

As information flows from data collection to tabulation, various types of item nonresponses are identified on the report forms. Nonresponse to particular questions on the report form that logically should be present may create a type of nonsampling error in both complete count and sample count data. When information from reporting farms is used to edit or impute for item nonresponse, the data may be biased due to characteristics of the nonreporting respondents differing from those reporting the item. Any attempt to correct the data items may not completely reflect this difference either at the element level (individual farm operation) or on the average.

## **Processing Error**

All phases of processing for each report form are sources for the introduction of nonsampling error. The processing of the report forms includes clerical screening for farm activity, computerized check-in of report forms and follow-up of nonrespondents, keying and transmittal of

completed report forms, computerized editing of inconsistent and missing data, review and correction of individual records referred from the computer edit, review and correction of tabulated data, and electronic data processing. These operations undergo a number of quality control checks to ensure as accurate an application as possible, yet some errors are not detected and corrected.

## Classification Error

An evaluation study of classification errors was conducted in the 1992 Census of Agriculture as part of the census coverage evaluation program. A sample of census mail list respondents was selected, and these addresses were reenumerated to determine whether they were a farm or nonfarm. A farm status determination was made based on the evaluation report form and compared with the census farm status which was based on the data reported on the report form. Differences in status were reconciled.

In past censuses, the proportion of farms undercounted due to classification errors was higher for farms with small values of sales. For the 1987 census, the classification error rate was higher for (1) farms with small values of sales, (2) farms with a small number of acres, (3) full-owner farms than part-owner or tenant farms, (4) operators with principal occupation other than farming, and (5) males than females. Results from the 1992 Classification Error Survey will be published in the Coverage Evaluation report.

## EDITING DATA AND IMPUTATION FOR ITEM NONRESPONSE

The Census of Agriculture Complex Edit and Imputation System performs the following functions:

- Ensuring reasonable relationships between/among data items, values for various sizes of farms, and combinations of commodities.
- Ensuring necessary consistencies are present. There are more than 70 distinct consistency requirements.
- Ensuring geographic, legal, and physical constraints are met.

The system must perform these and similar functions for 900 data keycodes for sample records and 850 data keycodes for nonsample records.

For the 1992 Census of Agriculture, as in previous censuses, all reported data were keyed and then edited by computer. The edits were used to determine whether the reports met the minimum criteria to be counted as farms in the census. The complex edit and imputation system provided the basis for deciding to accept, impute (supply), delete, or alter the reported value for each data record item.

Whenever possible, edit imputations, deletions, and changes were based on component or related data on the respondent's report form. For some items, such as operator characteristics, data from the previous census were used when available. Values for other missing or unacceptable reported data items were calculated based on reported quantities and known price parameters.

When these and similar methods were not available and values had to be supplied, the imputation process used information reported for another farm operation in a geographically adjacent area with characteristics similar to those of the farm operation with incomplete data. For example, a farm operation that reported acres of corn harvested, but did not report quantity of corn harvested, was assigned the same bushels of corn per acre harvested as that of the last nearby farm with similar characteristics that reported acceptable yields during that particular execution of the computer edit. The imputation for missing items in each section of the report form was conducted separately; thus, assigned values for one operation could come from more than one respondent.

Prior to the imputation operation, a set of default values and relationships were assigned to the possible imputation variables. The relationships and values varied depending on the item being imputed. For example, different default values were assigned for several standard industrial classification and total value of sales categories when imputing hired farm labor expenses. These values and item relationships for the possible imputation variables were stored in the computer in a series of matrices.

Each execution of the computer edit consisted of records from only one State. The computer records were sorted by reported State and county. For a given execution of the edit, the stored entries in the various matrices were retained in memory only until a succeeding record having acceptable characteristics for some sections of the report form was processed by the computer. Then the acceptable responses of the succeeding operation replaced those previously stored. When a record processed through the edit had unreported or unacceptable data, the record was assigned the last acceptable ratio or response from an operation with a similar set of characteristics. Once each execution of the computer edit for a State was completed, the possible imputation variables were reset to the default values and relationships for subsequent executions.

After the initial computer edit, keyed reports not meeting the census farm definition were reviewed to ensure that the data were keyed correctly. Edit referrals were generated for about 25 percent of the reports included as farms; they were reviewed for keying accuracy to ensure that the computer edit actions were correct. If the results of the computer edit were not acceptable, corrections were made and the record was reedited.

**Table C. Reliability Estimates of State Totals for All Farms: 1992**

[For meaning of abbreviations and symbols, see introductory text]

Item	Total	Relative standard error of estimate (percent)	Item	Total	Relative standard error of estimate (percent)		
<b>F FARMS AND LAND IN FARMS</b>							
Farms -----	51 854	1.0	<b>F FARM PRODUCTION EXPENSES<sup>1</sup></b>				
Land in farms -----	8 936 015	.7	Total farm production expenses -----	farms --	51 858	1.0	
Average size of farm -----	172	1.2	\$1,000--	\$1,000--	3 817 833	.3	
			Average per farm -----	dollars --	73 621	1.0	
<b>M MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD</b>							
Total sales (see text) -----	51 854	1.0	Livestock and poultry purchased -----	farms --	12 925	1.7	
\$1,000--	4 834 218	.3	\$1,000--	\$1,000--	431 873	.4	
Average per farm -----	93 227	1.0	Feed for livestock and poultry -----	farms --	23 132	1.3	
			\$1,000--	\$1,000--	1 288 719	.2	
Farms by value of sales:			Commercially mixed formula feeds -----	farms --	10 715	1.8	
Less than \$1,000 (see text) -----	5 574	1.0	\$1,000--	\$1,000--	941 007	.2	
\$1,000--	1 810	1.2					
\$1,000 to \$2,499 -----	7 042	1.0	Seeds, bulbs, plants, and trees -----	farms --	29 662	1.4	
\$1,000--	11 801	1.0	\$1,000--	\$1,000--	85 959	.9	
\$2,500 to \$4,999 -----	7 250	1.1	Commercial fertilizer -----	farms --	40 585	1.1	
\$1,000--	25 911	1.1	\$1,000--	\$1,000--	233 479	1.0	
\$5,000 to \$9,999 -----	6 968	1.1	Agricultural chemicals -----	farms --	30 449	1.4	
\$1,000--	49 348	1.1	Petroleum products -----	farms --	151 341	.8	
\$10,000 to \$19,999 -----	6 025	1.5	\$1,000--	\$1,000--	49 736	1.0	
\$1,000--	85 260	1.6			184 299	.8	
\$20,000 to \$24,999 -----	1 616	2.0	Electricity -----	farms --	32 089	1.3	
\$1,000--	35 877	2.0	\$1,000--	\$1,000--	66 747	.6	
\$25,000 to \$39,999 -----	3 116	2.0	Hired farm labor -----	farms --	21 919	1.4	
\$1,000--	98 171	2.1	\$1,000--	\$1,000--	388 338	.4	
\$40,000 to \$49,999 -----	1 281	2.2	Contract labor -----	farms --	6 362	2.5	
\$1,000--	56 911	2.2	\$1,000--	\$1,000--	41 893	1.6	
\$50,000 to \$99,999 -----	3 640	2.1	Repair and maintenance -----	farms --	42 818	1.1	
\$1,000--	261 413	2.1	\$1,000--	\$1,000--	171 928	.8	
\$100,000 to \$249,999 -----	4 444	.8	Customwork, machine hire, and rental of machinery and equipment -----	farms --	16 441	1.7	
\$1,000--	716 851	.6	\$1,000--	\$1,000--	42 312	1.8	
\$250,000 to \$499,999 -----	2 810	—	Interest expense -----	farms --	19 038	1.5	
\$1,000--	985 744	—	\$1,000--	\$1,000--	143 502	.8	
\$500,000 or more -----	2 088	—	Secured by real estate -----	farms --	13 588	1.7	
\$1,000--	2 505 121	—	\$1,000--	\$1,000--	102 028	1.0	
Sales by commodity or commodity group:			Not secured by real estate -----	farms --	9 391	2.1	
Crops, including nursery and greenhouse crops -----	32 939	1.1	\$1,000--	\$1,000--	41 474	.9	
\$1,000--	1 996 452	.6					
Grains -----	17 369	1.3	Cash rent -----	farms --	16 600	1.7	
\$1,000--	441 349	.7	\$1,000--	\$1,000--	163 376	.9	
Corn for grain -----	10 167	1.4	Property taxes -----	farms --	49 192	1.0	
\$1,000--	189 188	.7	\$1,000--	\$1,000--	59 169	1.1	
Wheat -----	6 531	1.2	All other farm production expenses -----	farms --	45 144	1.1	
\$1,000--	69 639	.6	\$1,000--	\$1,000--	364 899	.4	
Soybeans -----	12 739	1.4					
\$1,000--	175 628	.7	<b>NET CASH RETURN FROM AGRICULTURAL SALES FOR THE FARM UNIT (SEE TEXT)<sup>1</sup></b>				
Sorghum for grain -----	200	2.2	All farms -----	number --	51 858	1.0	
\$1,000--	996	1.9	\$1,000--	\$1,000--	912 136	.7	
Barley -----	400	1.6	Average per farm -----	dollars --	17 589	1.2	
\$1,000--	2 161	1.0	Farms with net gains <sup>2</sup> -----	number --	30 837	1.2	
Oats -----	881	1.4	\$1,000--	\$1,000--	1 023 730	.6	
\$1,000--	2 011	1.2	Average net gain -----	dollars --	33 198	1.4	
Other grains -----	374	1.5	Farms with net losses -----	number --	21 021	1.4	
\$1,000--	1 727	1.1	\$1,000--	\$1,000--	111 594	1.9	
Cotton and cottonseed -----	2 031	1.3	Average net loss -----	dollars --	5 309	2.3	
\$1,000--	126 090	.4					
Tobacco -----	17 611	1.2	<b>GOVERNMENT PAYMENTS AND OTHER FARM-RELATED INCOME</b>				
\$1,000--	956 323	.7	Government payments -----	farms --	9 805	1.2	
Hay, silage, and field seeds -----	5 224	.9	\$1,000--	\$1,000--	40 414	.6	
\$1,000--	20 020	.9	Other farm-related income <sup>1</sup> -----	farms --	12 408	2.0	
Vegetables, sweet corn, and melons -----	2 774	1.2	\$1,000--	\$1,000--	73 394	2.7	
\$1,000--	63 082	.7	Customwork and other agricultural services -----	farms --	3 939	3.3	
Fruits, nuts, and berries -----	1 202	1.3	\$1,000--	\$1,000--	31 476	4.2	
\$1,000--	26 039	1.2	Gross cash rent or share payments -----	farms --	6 381	2.8	
Nursery and greenhouse crops -----	2 028	1.1	\$1,000--	\$1,000--	20 423	3.6	
\$1,000--	183 777	.3	Forest products and Christmas trees -----	farms --	2 096	4.6	
Other crops -----	3 591	1.5	\$1,000--	\$1,000--	18 068	6.3	
\$1,000--	179 771	.5	Other farm-related income sources -----	farms --	1 867	4.5	
Livestock, poultry, and their products -----	27 732	.8	\$1,000--	\$1,000--	3 426	5.4	
\$1,000--	2 837 765	.1					
Poultry and poultry products -----	4 058	.5	<b>COMMODITY CREDIT CORPORATION LOANS</b>				
\$1,000--	1 551 291	.1					
Dairy products -----	1 014	.8					
\$1,000--	199 003	.2					
Cattle and calves -----	20 771	.8					
\$1,000--	158 790	.7					
Hogs and pigs -----	4 012	1.2					
\$1,000--	898 624	.1					
Sheep, lambs, and wool -----	499	1.6					
\$1,000--	777	3.1					
Other livestock and livestock products (see text) -----	2 237	1.1					
\$1,000--	29 280	.8					
Value of agricultural products sold directly to individuals for human consumption (see text) -----	2 134	1.2	Total -----	farms --	1 609	1.3	
\$1,000--	7 113	1.6	\$1,000--	\$1,000--	27 715	.6	

See footnotes at end of table.

## 1992 CENSUS OF AGRICULTURE

## APPENDIX C C-7

Table C. Reliability Estimates of State Totals for All Farms: 1992 —Con.

[For meaning of abbreviations and symbols, see introductory text]

Item	Total	Relative standard error of estimate (percent)	Item	Total	Relative standard error of estimate (percent)		
<b>LAND IN FARMS ACCORDING TO USE</b>							
Total cropland	farms--	47 497	All operators	farms--	51 854		
	acres--	5 578 191		acres--	8 936 015		
Harvested cropland	farms--	42 135	Full owners	farms--	29 242		
	acres--	3 998 685		acres--	3 003 960		
Farms by acres harvested:			Part owners	farms--	17 572		
1 to 9 acres	farms--	12 257		acres--	5 133 947		
	acres--	50 753	Tenants	farms--	5 040		
10 to 19 acres	farms--	7 606		acres--	798 108		
	acres--	102 198					
20 to 29 acres	farms--	4 631	<b>OWNED AND RENTED LAND</b>				
	acres--	107 236	Land owned	farms--	46 908		
30 to 49 acres	farms--	4 900		acres--	5 513 843		
	acres--	181 328	Owned land in farms	farms--	46 814		
50 to 99 acres	farms--	4 753		acres--	5 036 380		
	acres--	324 005	Land rented or leased from others	farms--	22 813		
100 to 199 acres	farms--	3 236		acres--	3 951 170		
	acres--	444 308	Rented or leased land in farms	farms--	22 612		
200 to 499 acres	farms--	2 932		acres--	3 899 635		
	acres--	912 900	Land rented or leased to others	farms--	8 912		
500 to 999 acres	farms--	1 195		acres--	528 998		
	acres--	816 732					
1,000 acres or more	farms--	625	<b>OPERATOR CHARACTERISTICS</b>				
	acres--	1 059 225	Operators by place of residence:				
Cropland:			On farm operated		36 678		
Pasture or grazing only	farms--	21 103			.9		
	acres--	835 097	Not on farm operated		10 223		
Other cropland	farms--	18 949			1.1		
	acres--	744 409	Not reported		4 953		
Total woodland	farms--	32 870	Operators by principal occupation:				
	acres--	2 613 514	Farming		27 376		
Pastureland and rangeland other than cropland and			Other		24 478		
woodland pastured	farms--	8 133					
	acres--	376 344	Operators by days worked off farm:				
Land in house lots, ponds, roads, wasteland, etc.	farms--	31 757	Any		25 958		
	acres--	367 966	200 days or more		17 989		
Irrigated land	farms--	4 337	Operators by sex:				
	acres--	112 630	Male	farms--	47 914		
Acres irrigated:				acres--	8 539 047		
1 to 9 acres	farms--	2 467	Female	farms--	3 940		
	acres--	7 837		acres--	396 968		
10 to 49 acres	farms--	1 329	Average age of operator	years--	54.7		
	acres--	28 962			1.4		
50 to 99 acres	farms--	323	Operators by type of organization:				
	acres--	21 273	Individual or family (sole proprietorship)	farms--	45 273		
100 to 199 acres	farms--	134		acres--	6 681 020		
	acres--	17 527	Partnership	farms--	4 750		
200 to 499 acres	farms--	62		acres--	1 247 359		
	acres--	17 589	Corporation:				
500 to 999 acres	farms--	18	Family held	farms--	1 415		
	acres--	11 797		acres--	866 762		
1,000 acres or more	farms--	4	More than 10 stockholders	farms--	28		
	acres--	7 645	10 or less stockholders	farms--	1 387		
Harvested cropland irrigated	farms--	4 167	Other than family held	farms--	174		
	acres--	105 667		acres--	58 700		
Pasture and other land irrigated	farms--	293	More than 10 stockholders	farms--	27		
	acres--	6 963	10 or less stockholders	farms--	147		
Land under federal acreage reduction programs:			Other—cooperative, estate or trust, institutional, etc.	farms--	242		
Diverted under annual commodity programs	farms--	3 847		acres--	82 174		
	acres--	59 335					
Conservation Reserve or Wetlands Reserve Programs	farms--	2 858	<b>HIRED FARM LABOR</b>				
	acres--	93 414	Hired workers by days worked:				
			150 days or more	farms--	8 881		
VALUE OF LAND AND BUILDINGS <sup>1</sup>				workers--	1.7		
Estimated market value of land and buildings	farms--	51 858	Less than 150 days	farms--	27 185		
\$1,000--		1.0		workers--	20 281		
Average per farm	dollars--	13 949 825			1.5		
Average per acre	dollars--	269 000			1.7		
		1 573					
VALUE OF MACHINERY AND EQUIPMENT <sup>1</sup>			<b>INJURIES AND DEATHS</b>				
Estimated market value of all machinery and equipment	farms--	51 785	Farm-related injuries:				
\$1,000--		1.0	Operator and family members	farms--	348		
Average per farm	dollars--	1 991 218		number--	417		
		1.4	Hired workers	farms--	434		
		1.4		number--	825		
AGRICULTURAL CHEMICALS <sup>1</sup>			<b>Farm-related deaths:</b>				
Commercial fertilizer	farms--	40 317	Operator and family members	farms--	12		
acres on which used--		3 741 135		number--	12		

See footnotes at end of table.

**C-8 APPENDIX C****1992 CENSUS OF AGRICULTURE**

Table C. Reliability Estimates of State Totals for All Farms: 1992 —Con.

[For meaning of abbreviations and symbols, see introductory text]

Item	Total	Relative standard error of estimate (percent)	Item	Total	Relative standard error of estimate (percent)	
<b>F FARMS BY SIZE</b>						
1 to 9 acres ----- farms --	4 651	1.1	Hogs and pigs inventory ----- farms --	4 311	1.1	
acres--	19 965	1.1	number--	5 100	.1	
10 to 49 acres ----- farms --	15 852	.9	farms --	4 012	1.2	
acres--	440 538	.9	number--	10 776	.1	
50 to 69 acres ----- farms --	5 526	1.1	\$1,000--	898 624	.1	
acres--	321 549	1.1	<b>L LIVESTOCK—Con.</b>			
70 to 99 acres ----- farms --	5 697	1.1	Hogs and pigs sold ----- farms --	574	1.5	
acres--	470 022	1.1	number--	19 546	2.4	
100 to 139 acres ----- farms --	5 002	1.3	Sheep and lambs sold ----- farms --	440	1.7	
acres--	582 745	1.3	number--	13 601	2.4	
140 to 179 acres ----- farms --	3 141	1.4	Horses and ponies inventory ----- farms --	6 003	.9	
acres--	493 259	1.4	number--	30 492	1.1	
180 to 219 acres ----- farms --	2 134	1.5	Horses and ponies sold ----- farms --	1 363	1.2	
acres--	421 191	1.5	number--	5 160	1.7	
220 to 259 acres ----- farms --	1 555	1.6	<b>P Poultry</b>			
acres--	370 818	1.6	Chickens 3 months old or older inventory ----- farms --	2 064	1.1	
260 to 499 acres ----- farms --	4 318	1.3	number--	18 133	.6	
acres--	1 522 972	1.3	Hens and pullets of laying age ----- farms --	1 895	1.1	
500 to 999 acres ----- farms --	2 564	.8	number--	14 337	.5	
acres--	1 727 593	.7	Broilers and other meat-type chickens sold ----- farms --	2 116	.4	
1,000 to 1,999 acres ----- farms --	1 054	—	number--	499 071	.1	
acres--	1 413 788	—	<b>C CROPS HARVESTED</b>			
2,000 acres or more ----- farms --	360	—	Corn for grain or seed ----- farms --	13 052	1.3	
acres--	1 151 575	—	acres--	1 019 871	.7	
<b>F FARMS BY STANDARD INDUSTRIAL CLASSIFICATION</b>						
Cash grains (011) ----- farms --	5 451	1.4	bushels--	96 617	.7	
acres--	1 402 672	1.0	farms --	1 727	1.0	
Field crops, except cash grains (013) ----- farms --	17 395	1.2	acres--	97 117	.4	
acres--	3 422 698	.8	Sorghum for grain or seed ----- farms --	1 421	.4	
Vegetables and melons (016) ----- farms --	1 105	1.5	acres--	390	1.8	
acres--	93 864	1.5	tons, green--	13 996	1.5	
Fruits and tree nuts (017) ----- farms --	992	1.4	bushels--	613 710	1.4	
acres--	86 000	1.4	Wheat for grain ----- farms --	6 883	1.2	
Horticultural specialties (018) ----- farms --	1 714	1.2	acres--	490 214	.7	
acres--	88 431	1.3	bushels--	23 164	.6	
General farms, primarily crop (019) ----- farms --	2 142	1.3	Barley for grain ----- farms --	794	1.3	
acres--	955 022	.6	acres--	30 798	.9	
Livestock, except dairy, poultry, and animal specialties (021) ----- farms --	16 560	.9	bushels--	1 830	.8	
acres--	1 959 464	.8	Oats for grain ----- farms --	1 993	1.2	
Dairy farms (024) ----- farms --	900	.8	acres--	36 407	.9	
acres--	339 426	.5	bushels--	2 190	1.0	
Poultry and eggs (025) ----- farms --	3 596	.5	Cotton ----- farms --	2 035	1.3	
acres--	422 891	.2	acres--	357 766	.4	
Animal specialties (027) ----- farms --	1 698	1.2	bales--	445 466	.4	
acres--	90 462	1.7	Tobacco ----- farms --	17 625	1.2	
General farms, primarily livestock and animal specialties (029) ----- farms --	301	2.0	acres--	283 900	.8	
acres--	75 085	2.0	bushels--	604 014	.7	
<b>L LIVESTOCK</b>						
Cattle and calves inventory ----- farms --	22 718	.8	Soybeans for beans ----- farms --	13 080	1.4	
number--	901 980	.7	acres--	1 287 573	.8	
Beef cows ----- farms --	19 531	.9	bushels--	34 176	.7	
number--	385 428	.9	Irish potatoes ----- farms --	857	1.4	
Milk cows ----- farms --	1 552	.9	acres--	18 775	.3	
number--	99 291	.3	cwt--	3 839 359	.3	
Cattle and calves sold ----- farms --	20 771	.8	Sweetpotatoes ----- farms --	954	1.4	
number--	399 035	.7	acres--	38 682	.5	
\$1,000--	158 790	.7	bushels--	8 536 954	.4	

<sup>1</sup>Data are based on a sample of farms.<sup>2</sup>Farms with total production expenses equal to market value of agricultural products sold are included as farms with gains of less than \$1,000.

**Table D. Reliability Estimates of State Totals for Farms With Sales of \$10,000 or More:  
1992**

[For meaning of abbreviations and symbols, see introductory text]

Item	Total	Relative standard error of estimate (percent)	Item	Total	Relative standard error of estimate (percent)			
<b>F FARMS AND LAND IN FARMS</b>								
Farms ----- number	25 020	1.2	Total farm production expenses ----- farms	24 858	1.3			
Land in farms ----- acres	7 034 857	.8	\$1,000----- \$1,000	3 691 500	.3			
Average size of farm ----- acres	281	1.5	Average per farm ----- dollars	148 504	1.4			
<b>M MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD</b>								
Total sales (see text) ----- farms	25 020	1.2	Livestock and poultry purchased ----- farms	7 936	1.8			
\$1,000----- \$1,000	4 745 348	.3	\$1,000----- \$1,000	422 851	.4			
Average per farm ----- dollars	189 662	1.3	Feed for livestock and poultry ----- farms	11 163	1.6			
Farms by value of sales:			Commercially mixed formula feeds ----- farms	6 698	1.8			
\$10,000 to \$19,999 ----- farms	6 025	1.5	\$1,000----- \$1,000	938 169	.2			
\$1,000----- \$1,000	85 260	1.6	Seeds, bulbs, plants, and trees ----- farms	18 302	1.6			
\$20,000 to \$24,999 ----- farms	1 616	2.0	\$1,000----- \$1,000	82 807	.9			
\$1,000----- \$1,000	35 877	2.0	Commercial fertilizer ----- farms	20 880	1.5			
\$25,000 to \$39,999 ----- farms	3 116	2.0	\$1,000----- \$1,000	216 242	1.0			
\$1,000----- \$1,000	98 171	2.1	Agricultural chemicals ----- farms	19 072	1.6			
\$40,000 to \$49,999 ----- farms	1 281	2.2	\$1,000----- \$1,000	146 936	.8			
\$1,000----- \$1,000	56 911	2.2	Petroleum products ----- farms	24 365	1.3			
\$50,000 to \$99,999 ----- farms	3 640	2.1	\$1,000----- \$1,000	172 634	.8			
\$1,000----- \$1,000	261 413	2.1	Electricity ----- farms	20 674	1.4			
\$100,000 to \$249,999 ----- farms	4 444	.8	\$1,000----- \$1,000	63 948	.6			
\$1,000----- \$1,000	716 851	.6	Hired farm labor ----- farms	15 935	1.5			
\$250,000 to \$499,999 ----- farms	2 810	—	\$1,000----- \$1,000	384 511	.4			
\$1,000----- \$1,000	985 744	—	Contract labor ----- farms	4 697	2.7			
\$500,000 or more ----- farms	2 088	—	\$1,000----- \$1,000	40 644	1.6			
\$1,000----- \$1,000	2 505 121	—	Repair and maintenance ----- farms	23 099	1.4			
Sales by commodity or commodity group:			\$1,000----- \$1,000	156 180	.8			
Crops, including nursery and greenhouse crops ----- farms	19 647	1.4	Customwork, machine hire, and rental of machinery and equipment ----- farms	10 773	2.0			
\$1,000----- \$1,000	1 950 945	.6	\$1,000----- \$1,000	39 423	1.9			
Grains ----- farms	12 433	1.5	Interest expense ----- farms	14 051	1.6			
\$1,000----- \$1,000	429 048	.7	\$1,000----- \$1,000	132 363	.8			
Corn for grain ----- farms	7 818	1.5	Secured by real estate ----- farms	9 801	1.8			
\$1,000----- \$1,000	184 506	.7	\$1,000----- \$1,000	92 301	.9			
Wheat ----- farms	5 461	1.3	Not secured by real estate ----- farms	7 546	2.1			
\$1,000----- \$1,000	68 007	.6	\$1,000----- \$1,000	40 062	.9			
Soybeans ----- farms	9 776	1.5						
\$1,000----- \$1,000	170 054	.7						
Sorghum for grain ----- farms	152	2.4	<b>NET CASH RETURN FROM AGRICULTURAL SALES FOR THE FARM UNIT (SEE TEXT)<sup>1</sup></b>					
\$1,000----- \$1,000	920	1.9	All farms ----- number	24 858	1.3			
Barley ----- farms	307	1.7	\$1,000----- \$1,000	948 855	.7			
\$1,000----- \$1,000	2 063	1.0	Average per farm ----- dollars	38 171	1.5			
Oats ----- farms	624	1.6						
\$1,000----- \$1,000	1 830	1.3						
Other grains ----- farms	322	1.5						
\$1,000----- \$1,000	1 668	1.1						
Cotton and cottonseed ----- farms	1 916	1.3	Farms with net gains <sup>2</sup> ----- number	20 777	1.4			
\$1,000----- \$1,000	125 730	.4	\$1,000----- \$1,000	1 002 456	.6			
Tobacco ----- farms	12 837	1.4	dollars	48 248	1.5			
\$1,000----- \$1,000	936 652	.7						
Hay, silage, and field seeds ----- farms	2 157	1.2	Farms with net losses ----- number	4 081	3.4			
\$1,000----- \$1,000	14 778	1.0	\$1,000----- \$1,000	53 601	2.8			
Vegetables, sweet corn, and melons ----- farms	1 670	1.5	dollars	13 134	4.4			
\$1,000----- \$1,000	60 379	.7						
Fruits, nuts, and berries ----- farms	598	1.7						
\$1,000----- \$1,000	24 737	1.2						
Nursery and greenhouse crops ----- farms	1 260	1.3	<b>GOVERNMENT PAYMENTS AND OTHER FARM-RELATED INCOME</b>					
\$1,000----- \$1,000	181 070	.3	Government payments ----- farms	6 890	1.3			
Other crops ----- farms	2 959	1.6	\$1,000----- \$1,000	37 470	.6			
\$1,000----- \$1,000	178 551	.5	Other farm-related income <sup>1</sup> ----- farms	6 476	2.5			
Livestock, poultry, and their products ----- farms	12 767	1.0	\$1,000----- \$1,000	57 457	3.1			
\$1,000----- \$1,000	2 794 403	.1	Customwork and other agricultural services ----- farms	2 342	3.9			
Poultry and poultry products ----- farms	3 747	.5	\$1,000----- \$1,000	27 856	4.6			
\$1,000----- \$1,000	1 551 114	.1	Gross cash rent or share payments ----- farms	2 906	3.9			
Dairy products ----- farms	946	.8	\$1,000----- \$1,000	12 983	4.2			
\$1,000----- \$1,000	198 732	.2	Forest products and Christmas trees ----- farms	995	6.3			
Cattle and calves ----- farms	8 030	1.1	\$1,000----- \$1,000	13 734	7.5			
\$1,000----- \$1,000	121 960	.8	Other farm-related income sources ----- farms	1 447	4.6			
Hogs and pigs ----- farms	2 817	1.3	\$1,000----- \$1,000	2 884	5.4			
\$1,000----- \$1,000	895 656	.1						
Sheep, lambs, and wool ----- farms	179	2.3						
\$1,000----- \$1,000	490	4.5						
Other livestock and livestock products (see text) ----- farms	671	1.6	<b>COMMODITY CREDIT CORPORATION LOANS</b>					
\$1,000----- \$1,000	26 452	.9	Total ----- farms	1 455	1.4			
Value of agricultural products sold directly to individuals for human consumption (see text) ----- farms	805	1.7	\$1,000----- \$1,000	27 533	.6			
\$1,000----- \$1,000	5 355	1.9						

See footnotes at end of table.

## C-10 APPENDIX C

## 1992 CENSUS OF AGRICULTURE

**Table D. Reliability Estimates of State Totals for Farms With Sales of \$10,000 or More:  
1992—Con.**

[For meaning of abbreviations and symbols, see introductory text]

Item	Total	Relative standard error of estimate (percent)	Item	Total	Relative standard error of estimate (percent)			
<b>LAND IN FARMS ACCORDING TO USE</b>								
Total cropland	farms--	23 197	1.3	Farms by type of organization				
	acres--	4 748 796	.7	Individual or family (sole proprietorship)	farms--	20 480	1.3	
Harvested cropland	farms--	21 896	1.3		acres--	4 975 101	.9	
	acres--	3 673 314	.7	Partnership	farms--	3 111	1.2	
Cropland:					acres--	1 110 104	.6	
Pasture or grazing only	farms--	8 268	1.1	Corporation:				
	acres--	482 412	1.0	Family held	farms--	1 188	.7	
Total woodland	farms--	15 575	1.2		acres--	835 667	.3	
	acres--	1 811 477	.8	More than 10 stockholders	farms--	24	3.3	
Pastureland and rangeland other than cropland and				10 or less stockholders	farms--	1 164	.7	
woodland pastured	farms--	3 302	1.2	Other than family held	farms--	136	2.0	
	acres--	229 116	.9		acres--	52 049	.9	
Land in house lots, ponds, roads, wasteland, etc.	farms--	15 455	1.2	More than 10 stockholders	farms--	26	3.7	
	acres--	245 468	.9	10 or less stockholders	farms--	110	2.3	
Irrigated land	farms--	3 307	1.2	Other—cooperative, estate or trust, institutional, etc.	farms--	105	2.8	
	acres--	108 446	.5		acres--	61 936	1.2	
Harvested cropland irrigated	farms--	3 208	1.2	Hired farm labor				
	acres--	102 483	.5	Hired workers by days worked:				
Pasture and other land irrigated	farms--	200	1.3	150 days or more	farms--	7 186	1.5	
	acres--	5 963	1.5		workers--	25 475	.8	
Land under federal acreage reduction programs:				Less than 150 days	farms--	14 368	1.7	
Diverted under annual commodity programs	farms--	3 494	1.3		workers--	110 760	1.9	
	acres--	58 657	.5	INJURIES AND DEATHS				
Conservation Reserve or Wetlands Reserve	farms--	1 813	1.2	Farm-related injuries:				
Programs	acres--	65 390	1.0	Operator and family members	farms--	212	1.9	
<b>VALUE OF LAND AND BUILDINGS<sup>1</sup></b>								
Estimated market value of land and buildings	farms--	24 858	1.3		number--	263	2.1	
	\$1,000--	10 117 831	1.1	Hired workers	farms--	410	.7	
Average per farm	dollars--	407 025	1.7		number--	799	.5	
Average per acre	dollars--	1 451	1.5	Farm-related deaths:				
<b>VALUE OF MACHINERY AND EQUIPMENT<sup>1</sup></b>								
Estimated market value of all machinery and equipment	farms--	24 849	1.3	Operator and family members	farms--	7	10.5	
	\$1,000--	1 624 191	1.0		number--	(D)	(D)	
Average per farm	dollars--	65 362	1.6	Hired workers	farms--	5	8.2	
					number--	(D)	(D)	
<b>AGRICULTURAL CHEMICALS<sup>1</sup></b>								
Commercial fertilizer	farms--	20 813	1.5	<b>F FARMS BY SIZE</b>				
acres on which used	--	3 378 474	1.0	1 to 9 acres	farms--	1 494	1.3	
<b>TENURE OF OPERATOR</b>					10 to 49 acres	farms--	4 578	1.3
All operators	farms--	25 020	1.2	50 to 69 acres	farms--	1 908	1.6	
	acres--	7 034 857	.8	70 to 99 acres	farms--	2 405	1.6	
Full owners	farms--	10 336	1.2	100 to 139 acres	farms--	2 649	1.7	
	acres--	1 673 679	1.0	140 to 179 acres	farms--	1 982	1.8	
Part owners	farms--	11 578	1.3	180 to 219 acres	farms--	1 490	1.8	
	acres--	4 637 781	.7	220 to 259 acres	farms--	1 131	1.8	
Tenants	farms--	3 106	1.7	260 to 499 acres	farms--	3 630	1.4	
	acres--	723 397		500 to 999 acres	farms--	2 375	.8	
				1,000 to 1,999 acres	farms--	1 026	—	
				2,000 acres or more	farms--	352	—	
<b>OWNED AND RENTED LAND</b>								
Land owned	farms--	21 968	1.2	<b>F FARMS BY STANDARD INDUSTRIAL CLASSIFICATION</b>				
	acres--	3 681 866	.9	Cash grains (011) -----	farms--	2 221	2.0	
Owned land in farms	farms--	21 914	1.2	Field crops, except cash grains (013) -----	farms--	11 243	1.5	
	acres--	3 445 296	.9	Vegetables and melons (016) -----	farms--	395	2.3	
Land rented or leased from others	farms--	14 781	1.4	Fruits and tree nuts (017) -----	farms--	325	2.0	
	acres--	3 632 260	.6	Horticultural specialties (018) -----	farms--	1 041	1.3	
landlords	--	66 251	.9	General farms, primarily crop (019) -----	farms--	1 248	1.7	
Rented or leased land in farms	farms--	14 684	1.3	Livestock, except dairy, poultry, and animal specialties (021) -----	farms--	3 894	1.1	
	acres--	3 589 561	.6	Dairy farms (024) -----	farms--	845	.8	
Land rented or leased to others	farms--	4 426	1.4	Poultry and eggs (025) -----	farms--	3 507	.5	
	acres--	279 269	1.2	Animal specialties (027) -----	farms--	262	2.4	
				General farms, primarily livestock and animal specialties (029) -----	farms--	39	3.7	
<b>OPERATOR CHARACTERISTICS</b>								
Operators by place of residence:				<b>LIVESTOCK</b>				
On farm operated		17 610	1.2	Cattle and calves inventory -----	farms--	8 390	1.1	
Not on farm operated <sup>1</sup>		5 226	1.4		number--	604 729	.8	
Not reported		2 184	1.3	Beef cows -----	farms--	6 834	1.2	
Operators by principal occupation:					number--	223 600	1.1	
Farming		17 954	1.2	Milk cows -----	farms--	1 078	.9	
Other		7 066	1.4		number--	98 154	.3	
Operators by days worked off farm:				Cattle and calves sold -----	farms--	8 030	1.1	
Any		9 662	1.4		number--	288 879	.8	
200 days or more		5 660	1.4	\$1,000--	farms--	121 960	.8	
Operators by sex:				Hogs and pigs inventory -----	farms--	2 851	1.3	
Male		23 493	1.3		number--	5 063 722	.1	
Female		1 527	1.4	Hogs and pigs sold -----	farms--	2 817	1.3	
Average age of operator	years--	52.5	1.8		number--	10 731 369	.1	
				\$1,000--	farms--	895 656	.1	

See footnotes at end of table.

**Table D. Reliability Estimates of State Totals for Farms With Sales of \$10,000 or More:  
1992—Con.**

[For meaning of abbreviations and symbols, see introductory text]

Item	Total	Relative standard error of estimate (percent)	Item	Total	Relative standard error of estimate (percent)
<b>POULTRY</b>					
Chickens 3 months old or older inventory	farms--	1 046	Barley for grain	farms--	586
number--		.6	acres--	29 059	.9
Hens and pullets of laying age	farms--	905	bushels--	1 745 456	.8
number--		14 317 615	Oats for grain	farms--	1 264
			acres--	30 636	1.0
Broilers and other meat-type chickens sold	farms--	2 093	bushels--	1 923 852	1.0
number--		498 947 375	Cotton	farms--	1 917
			acres--	356 223	.4
			bales--	444 017	.4
			Tobacco	farms--	12 841
			acres--	2 751 096	.8
			pounds--	590 292 239	.7
			Soybeans for beans	farms--	9 923
			acres--	1 233 009	.7
			bushels--	33 011 658	.7
			Irish potatoes	farms--	362
			acres--	18 244	2.0
			cwt--	3 785 720	.3
			Sweetpotatoes	farms--	762
			acres--	38 178	.5
			Peanuts for nuts	bushels--	8 474 836
			farms--	2 090	.4
Corn for silage or green chop	farms--	9 206	acres--	147 606	.7
acres--		978 104	pounds--	396 032 515	.6
bushels--		93 864 221	Hay—alfalfa, other tame, small grain, wild, grass	farms--	7 137
Sorghum for grain or seed	farms--	1 284	silage, green chop, etc. (see text)	acres--	278 899
tons, green--		1 371 716	tons, dry--	624 395	1.0
acres--		268	Vegetables harvested for sale (see text)	farms--	1 670
bushels--		12 603	acres--	53 636	.9
Wheat for grain	farms--	567 914	Land in orchards	farms--	547
acres--		5 637	acres--	14 807	.7
bushels--		473 429			1.7
		22 581 195			
		.6			

<sup>1</sup>Data are based on a sample of farms.

<sup>2</sup>Farms with total production expenses equal to market value of agricultural products sold are included as farms with gains of less than \$1,000.

**Table E. Reliability Estimates of Percent Change in State Totals: 1987 to 1992**

[For meaning of abbreviations and symbols, see introductory text]

Item	All farms		Farms with sales of \$10,000 or more	
	Percent change from 1987 to 1992	Standard error of estimate	Percent change from 1987 to 1992	Standard error of estimate
Farms-----	-12.5	.9	-2.7	1.3
Land in farms -----	-5.4	.7	-8	.8
Average size of farm -----	8.2	1.4	1.8	1.6
Estimated market value of land and buildings <sup>1</sup> :				
Average per farm -----	dollars --	34.6	2.1	25.8
Average per acre -----	dollars --	24.5	2.0	22.9
Estimated market value of all machinery and equipment <sup>1</sup> :				
Average per farm -----	dollars --	26.5	2.0	21.2
Farms by size:				
1 to 9 acres -----		-11.5	1.1	-1.6
10 to 49 acres -----		-12.4	1.0	11.1
50 to 179 acres -----		-14.6	1.0	-3.0
180 to 499 acres -----		-14.2	1.2	-12.8
500 to 999 acres -----		-4.2	.9	-4.1
1,000 to 1,999 acres -----		12.4	-	11.9
2,000 acres or more -----		15.4	-	15.8
Total cropland -----	farms --	-13.6	.9	-3.2
	acres --	-2.4	.7	1.3
Harvested cropland -----	farms --	-15.9	.9	-4.1
	acres --	5.8	.8	9.6
Irrigated land -----	farms --	-32.7	.8	-30.0
	acres --	-18.3	.5	-17.4
Market value of agricultural products sold -----	\$1,000 --	36.5	.5	38.2
Average per farm -----	dollars --	56.1	1.7	42.1
Crops, including nursery and greenhouse crops -----	\$1,000 --	38.9	.9	41.8
Livestock, poultry, and their products -----	\$1,000 --	34.8	.2	35.8
Farms by value of sales:				
Less than \$2,500 -----		-24.7	.7	(X)
\$2,500 to \$4,999 -----		-14.3	1.1	(X)
\$5,000 to \$9,999 -----		-16.5	1.1	(X)
\$10,000 to \$24,999 -----		-10.3	1.5	-10.3
\$25,000 to \$49,999 -----		-8.7	2.0	1.5
\$50,000 to \$99,999 -----		-14.8	1.9	-14.8
\$100,000 to \$249,999 -----		-8.5	.8	-8.5
\$250,000 to \$499,999 -----		29.1	-	29.1
\$500,000 or more -----		92.6	-	92.6
Total farm production expenses <sup>1</sup> -----	\$1,000 --	37.4	1.4	39.7
Average per farm -----	dollars --	57.0	1.7	43.8
Net cash return from agricultural sales for the farm unit (see text) <sup>1</sup> -----	farms --	-12.5	.9	-2.9
	\$1,000 --	32.5	1.3	32.4
Average per farm -----	dollars --	51.5	2.1	36.3
Operators by principal occupation:				
Farming -----		-10.8	1.0	-6.4
Other -----		-14.4	.9	8.2
Operators by days worked off farm:				
Any -----		-18.7	4.1	-7.1
200 days or more -----		-17.1	4.2	.7
Livestock and poultry:				
Cattle and calves inventory -----	farms --	-9.1	.9	1.0
	number --	15.0	.9	16.5
Beef cows -----	farms --	-5.3	.9	6.8
	number --	20.2	1.2	29.3
Milk cows -----	farms --	-33.6	.7	-22.8
	number --	9.8	.3	-9.1
Cattle and calves sold -----	farms --	-8.4	.9	1.1
	number --	.8	.8	.9
Hogs and pigs inventory -----	farms --	-37.7	.8	-29.0
	number --	100.3	.3	102.7
Hogs and pigs sold -----	farms --	-36.2	.8	-28.3
	number --	108.0	.3	110.3
Sheep and lambs inventory -----	farms --	5.9	2.1	3.2
	number --	23.6	4.1	30.0
Chickens 3 months old or older inventory -----	farms --	-38.0	.8	-27.9
	number --	-9.6	.5	-9.9
Broilers and other meat-type chickens sold -----	farms --	-1.7	.5	-1.8
	number --	22.1	.2	22.1
Selected crops harvested:				
Corn for grain or seed -----	farms --	-37.8	.8	-28.6
	acres --	-3.4	.7	.1
	bushels --	34.6	1.0	38.9
Wheat for grain -----	farms --	-11.2	1.1	-1.4
	acres --	29.4	1.0	34.4
	bushels --	53.5	1.1	58.3
Cotton -----	farms --	107.4	3.1	115.4
	acres --	279.9	2.2	282.8
	bales --	375.3	2.6	378.4
Tobacco -----	farms --	-20.8	1.0	-7.3
	acres --	18.6	1.0	22.8
	pounds --	26.3	1.0	29.9
Soybeans for beans -----	farms --	-24.9	1.1	-17.2
	acres --	1.1	.8	4.0
	bushels --	9.0	.8	11.4
Peanuts for nuts -----	farms --	-22.0	1.4	-17.7
	acres --	3.1	.8	4.1
	pounds --	4.9	.7	5.9
Hay—alfalfa, other tame, small grain, wild, grass silage, green chop, etc. (see text) -----	farms --	-11.9	.8	2.5
	acres --	2.3	.9	7.9
	tons, dry --	15.9	1.0	20.0

<sup>1</sup>Data are based on a sample of farms.

## 1992 CENSUS OF AGRICULTURE

## APPENDIX C C-13





































**Table F. Reliability Estimates for the State and County Totals: 1992 —Con.**

[For meaning of abbreviations and symbols, see introductory text]

Geographic area	Selected crops harvested —Con.										
	Soybeans for beans					Peanuts for nuts					
	Farms		Acres		Quantity	Farms		Acres		Quantity	
	Number	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Bushels	Number	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Pounds	
Jackson -----	—	—	—	—	—	—	—	—	—	—	
Johnston -----	717	1.1	47 345	.7	1 172 414	.7	13	7.1	227	4.2	
Jones -----	118	3.0	11 136	3.2	272 847	3.4	—	—	—	—	
Lee -----	70	3.0	2 612	2.9	42 164	2.9	—	—	—	—	
Lenoir -----	322	1.2	28 728	.8	759 653	.9	2	—	(D)	(D)	
Lincoln -----	70	4.0	5 228	5.4	105 302	5.5	2	19.1	(D)	(D)	
McDowell -----	7	12.7	331	7.4	13 148	5.2	—	—	—	—	
Macon -----	—	—	—	—	—	—	—	—	—	—	
Madison -----	—	—	—	—	—	—	—	—	—	—	
Martin -----	331	2.4	16 011	2.0	432 876	2.0	377	2.3	16 954	1.2	
Mecklenburg -----	7	12.8	545	14.7	10 000	10.6	—	—	—	—	
Mitchell -----	—	—	—	—	—	—	—	—	—	—	
Montgomery -----	23	4.9	970	5.2	18 408	6.0	1	—	(D)	(D)	
Moore -----	42	4.1	2 963	8.4	56 650	8.6	—	—	—	—	
Nash -----	263	1.2	32 582	.5	812 517	.5	38	3.0	3 274	.9	
New Hanover -----	10	11.4	1 055	6.2	33 011	7.2	5	16.4	11	24.4	
Northampton -----	181	2.3	10 763	1.0	330 035	.9	267	2.1	25 615	.9	
Onslow -----	177	2.0	12 986	2.4	317 529	2.4	4	16.6	32	17.0	
Orange -----	26	5.3	2 103	6.4	45 163	5.5	—	—	—	—	
Pamlico -----	56	2.1	18 749	.9	597 866	.8	—	—	—	—	
Pasquotank -----	162	2.5	42 547	1.3	1 462 477	1.3	4	17.7	126	19.9	
Pender -----	127	2.8	13 800	2.4	372 488	2.4	13	9.3	810	9.8	
Perguimans -----	173	2.9	26 696	2.1	977 823	2.1	89	3.5	3 012	2.2	
Person -----	59	2.9	3 058	1.6	75 632	2.2	—	—	—	—	
Pitt -----	389	1.2	47 838	.6	1 231 820	.6	136	1.9	5 005	.9	
Polk -----	7	10.0	78	13.4	2 045	10.8	—	—	—	—	
Randolph -----	121	2.8	4 924	3.4	129 055	3.0	3	17.6	4	21.5	
Richmond -----	20	5.1	4 536	3.4	89 301	3.2	1	—	(D)	(D)	
Robeson -----	811	2.3	92 192	1.5	2 103 974	1.5	12	6.8	139	4.1	
Rockingham -----	119	3.4	2 568	2.5	64 692	2.6	—	—	—	—	
Rowan -----	142	2.5	10 469	3.0	257 363	3.4	2	22.6	(D)	(D)	
Rutherford -----	19	6.4	511	10.6	8 807	10.8	—	—	—	—	
Sampson -----	677	2.7	47 244	1.8	1 224 652	1.8	20	9.9	246	13.8	
Scotland -----	55	3.6	12 994	2.1	291 594	2.1	—	—	—	—	
Stanly -----	133	2.0	21 098	1.4	514 437	1.3	—	—	—	—	
Stokes -----	92	3.1	1 021	4.1	18 938	4.6	—	—	—	—	
Surry -----	144	2.3	3 561	2.2	90 761	2.3	—	—	—	—	
Swain -----	—	—	—	—	—	—	—	—	—	—	
Transylvania -----	—	—	—	—	—	—	—	—	—	—	
Tyrrell -----	72	1.7	29 444	.5	866 372	.6	5	7.5	196	4.6	
Union -----	254	1.4	58 333	.9	1 637 963	.8	—	—	—	—	
Vance -----	113	2.3	6 394	2.5	149 701	3.0	—	—	—	—	
Wake -----	270	1.7	16 403	1.6	329 831	1.6	2	19.1	(D)	(D)	
Warren -----	79	2.8	5 768	2.5	125 150	2.8	—	—	—	—	
Washington -----	155	2.0	38 945	1.0	1 220 482	.8	64	3.9	2 725	2.3	
Watauga -----	—	—	—	—	—	—	—	—	—	—	
Wayne -----	509	1.2	48 015	.8	1 287 989	.8	5	10.6	70	6.7	
Wilkes -----	15	5.4	380	5.6	9 953	6.3	—	—	(D)	(D)	
Wilson -----	343	1.1	37 718	.5	1 087 303	.5	4	8.3	(D)	(D)	
Yadkin -----	209	2.5	9 164	2.8	228 244	2.9	—	—	—	—	
Yancey -----	—	—	—	—	—	—	—	—	—	—	
Geographic area	Selected crops harvested —Con.										
	Hay—alfalfa, other tame, small grain, wild, grass silage, green chop, etc. (see text)										
	Farms			Acres			Quantity				
	Number	Relative standard error of estimate (percent)	Number	Number	Relative standard error of estimate (percent)	Number	Tons, dry	Relative standard error of estimate (percent)	—	—	—
North Carolina -----	18 268	.8	466 944	.8	922 347	.8	—	—	—	—	—
Alamance -----	393	1.7	11 543	2.6	21 627	3.0	—	—	—	—	—
Alexander -----	294	1.1	8 588	1.8	21 502	1.6	—	—	—	—	—
Alleghany -----	314	1.2	10 057	2.1	19 208	2.2	—	—	—	—	—
Anson -----	118	2.2	4 424	2.7	10 520	2.8	—	—	—	—	—
Ashe -----	580	1.0	10 007	1.4	19 106	2.0	—	—	—	—	—
Avery -----	69	3.7	1 415	6.5	1 811	5.6	—	—	—	—	—
Beaufort -----	15	9.3	208	9.0	631	8.4	—	—	—	—	—
Bertie -----	2	—	(D)	(D)	(D)	(D)	—	—	—	—	—
Bladen -----	97	3.5	2 311	3.3	4 767	2.9	—	—	—	—	—
Brunswick -----	32	5.8	602	6.7	1 088	6.6	—	—	—	—	—
Buncombe -----	552	1.3	11 148	1.4	22 286	1.7	—	—	—	—	—
Burke -----	202	1.6	3 977	2.7	6 641	3.9	—	—	—	—	—
Cabarrus -----	250	1.4	9 297	2.5	17 834	3.2	—	—	—	—	—
Caldwell -----	177	1.9	3 660	2.6	7 989	3.7	—	—	—	—	—
Camden -----	2	—	(D)	(D)	(D)	(D)	—	—	—	—	—
Carteret -----	4	16.8	64	7.8	(D)	(D)	—	—	—	—	—
Caswell -----	270	1.6	8 182	1.9	15 227	2.6	—	—	—	—	—
Catawba -----	307	1.1	8 793	1.7	16 030	2.1	—	—	—	—	—
Chatham -----	446	1.0	11 440	1.2	23 439	1.2	—	—	—	—	—

See footnotes at end of table.

## C-32 APPENDIX C

## 1992 CENSUS OF AGRICULTURE

**Table F. Reliability Estimates for the State and County Totals: 1992 —Con.**

[For meaning of abbreviations and symbols, see introductory text]

Geographic area	Selected crops harvested —Con.					
	Hay—alfalfa, other tame, small grain, wild, grass silage, green chop, etc. (see text)					
	Farms		Acres		Quantity	
	Number	Relative standard error of estimate (percent)	Number	Relative standard error of estimate (percent)	Tons, dry	Relative standard error of estimate (percent)
Cherokee -----	111	2.6	2 892	3.9	5 913	4.3
Chowan -----	11	9.7	161	3.6	247	5.3
Clay -----	104	2.2	3 117	4.0	5 405	4.0
Cleveland -----	392	1.3	10 808	1.7	18 730	3.2
Columbus -----	121	3.4	1 879	3.9	3 989	4.9
Craven -----	26	5.7	686	10.4	2 033	14.1
Cumberland -----	100	3.0	3 121	3.8	7 710	4.2
Currituck -----	4	14.3	50	19.6	127	28.2
Dare -----	—	—	—	—	—	—
Davidson -----	555	.9	13 980	1.5	26 617	2.1
Davie -----	347	1.2	10 967	2.6	18 507	2.3
Duplin -----	123	2.6	3 033	3.2	8 876	2.4
Durham -----	59	2.9	1 906	4.1	3 753	5.6
Edgecombe -----	17	5.0	758	2.2	1 831	2.7
Forsyth -----	333	1.4	6 668	2.4	12 065	3.0
Franklin -----	140	3.1	5 825	3.7	10 963	3.9
Gaston -----	193	1.5	6 353	2.4	12 333	2.2
Gates -----	8	5.9	142	9.4	234	5.6
Graham -----	42	5.3	607	9.9	1 323	10.5
Granville -----	298	2.2	10 082	2.5	19 398	2.0
Greene -----	25	4.0	776	11.4	2 260	7.8
Guildford -----	504	1.5	10 780	2.2	19 251	2.7
Halifax -----	31	6.0	3 633	3.2	4 721	1.6
Harnett -----	173	2.2	3 529	2.3	7 040	2.4
Haywood -----	411	1.5	6 268	1.8	14 724	1.9
Henderson -----	143	2.4	4 491	2.1	9 028	2.6
Hertford -----	2	24.0	(D)	(D)	(D)	(D)
Hoke -----	38	4.7	1 279	5.1	3 540	4.5
Hyde -----	6	8.3	138	.4	211	.2
Iredell -----	724	1.0	26 867	1.1	56 899	1.2
Jackson -----	89	3.1	1 338	6.6	2 185	8.6
Johnston -----	307	1.5	4 690	2.1	10 015	3.1
Jones -----	18	5.6	268	7.1	576	6.6
Lee -----	94	2.7	1 523	3.8	2 568	4.2
Lenoir -----	34	4.1	682	4.1	1 904	3.1
Lincoln -----	273	1.6	8 788	3.7	16 740	3.5
McDowell -----	107	2.4	2 048	4.3	3 758	7.9
Macon -----	171	1.9	3 239	2.8	7 395	4.6
Madison -----	372	2.2	4 737	3.2	8 350	3.7
Martin -----	14	8.5	405	8.8	378	12.5
Mecklenburg -----	172	1.6	5 515	2.5	10 070	3.2
Mitchell -----	99	3.0	1 665	5.7	2 905	9.7
Montgomery -----	91	2.1	2 806	4.1	4 655	3.0
Moore -----	229	1.7	5 290	2.5	12 453	2.5
Nash -----	88	2.6	2 946	3.2	5 988	3.6
New Hanover -----	4	16.7	60	16.7	120	16.7
Northampton -----	13	7.0	722	7.3	1 473	5.1
Onslow -----	52	3.7	1 146	2.8	2 716	2.3
Orange -----	258	1.4	9 100	1.9	16 154	1.8
Pamlico -----	3	15.3	(D)	(D)	149	17.3
Pasquotank -----	1	43.3	(D)	(D)	(D)	(D)
Pender -----	33	6.1	930	6.8	2 665	11.4
Perguimans -----	8	10.1	258	10.2	508	10.1
Person -----	192	1.9	5 836	2.1	9 806	2.5
Pitt -----	36	4.4	1 255	4.4	3 065	5.9
Polk -----	80	2.4	2 207	3.4	4 920	2.6
Randolph -----	660	1.1	16 709	1.2	30 305	1.4
Richmond -----	65	2.7	2 260	3.7	4 324	4.3
Robeson -----	116	3.7	4 089	5.7	11 905	7.4
Rockingham -----	379	1.9	8 212	2.5	13 815	2.9
Rowan -----	506	1.1	15 994	1.6	37 172	1.7
Rutherford -----	285	1.2	7 969	2.1	11 565	2.6
Sampson -----	207	2.9	5 649	2.0	10 912	3.1
Scotland -----	20	6.7	1 299	10.0	1 607	9.6
Stanly -----	300	1.2	9 892	1.5	18 603	1.6
Stokes -----	414	1.4	8 124	2.8	14 760	5.2
Surry -----	643	1.1	12 667	1.5	22 416	1.8
Swain -----	31	5.4	723	7.1	1 547	6.8
Transylvania -----	78	3.1	2 210	5.5	4 383	5.9
Tyrrell -----	3	19.0	21	18.5	22	18.4
Union -----	317	1.2	8 135	1.9	18 130	2.9
Vance -----	72	3.2	2 180	5.6	3 380	7.1
Wake -----	189	2.1	5 180	2.7	9 174	3.9
Warren -----	122	2.2	4 894	2.2	8 557	2.5
Washington -----	10	9.7	69	9.6	129	10.9
Watauga -----	310	1.3	4 714	1.8	8 144	2.1
Wayne -----	131	2.2	2 984	2.6	9 941	2.7
Wilkes -----	675	.9	14 702	1.0	35 096	1.3
Wilson -----	36	4.2	863	4.5	1 159	7.2
Yadkin -----	501	1.6	10 598	2.0	21 048	2.2
Yancey -----	195	2.5	2 362	3.5	3 568	5.3

<sup>1</sup>Data are based on a sample of farms.

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## APPENDIX C C-33

**Table G. State Estimates of the Not on the Mail List Component of Farm Coverage Error:  
1992**

[Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text]

Item	Census published farms		Not on mail list <sup>1</sup>		Percent not on mail list <sup>1</sup>	
	Total (number)	Relative standard error of estimate (percent)	Total (number)	Relative standard error of estimate (percent)	Total (percent)	Standard error of percent
Farms ----- number -----	51 854	1.0	9 568	17.4	15.6	2.4
Land in farms ----- acres -----	8 936 015	.7	362 680	20.5	3.9	.8
Average size of farm ----- acres -----	172.3	1.2	37.9	13.6	(X)	(X)
Farms by size:						
Less than 10 acres -----	4 651	1.1	2 769	31.3	37.3	7.5
10 to 49 acres -----	15 852	.9	4 157	23.2	20.8	4.0
Less than 50 acres -----	20 503	.9	6 926	19.5	25.2	3.9
50 acres or more -----	31 351	1.1	2 642	27.0	7.8	1.9
50 to 99 acres -----	11 223	1.0	2 255	29.3	16.7	4.0
100 to 179 acres -----	8 143	1.3	279	72.6	3.3	2.3
180 acres or more -----	11 985	1.0	108	50.0	.9	.4
Harvested cropland ----- farms -----	42 135	1.0	5 053	21.3	10.7	2.1
acres -----	3 998 685	.7	110 683	27.7	2.7	.7
Farms by value of sales:						
Less than \$1,000 -----	5 574	1.0	4 426	24.7	44.3	6.1
\$1,000 to \$2,499 -----	7 042	1.0	2 896	28.7	29.1	5.9
Less than \$2,500 -----	12 616	1.0	7 322	21.1	36.7	4.9
\$2,500 or more -----	39 238	1.1	2 245	24.4	5.4	1.2
\$2,500 to \$9,999 -----	14 218	1.0	1 693	28.4	10.6	2.7
\$10,000 or more -----	25 020	1.2	552	48.7	2.2	1.0
Market value of agricultural products sold    ----- \$1,000 -----	4 834 218	.3	31 694	36.5	.7	.3
Farms by standard industrial classification:						
Crops (01) -----	28 799	1.2	3 413	25.3	10.6	2.5
Livestock (02) -----	23 055	.7	6 155	21.8	21.1	3.7
Farms by type of organization:						
Individual or family -----	45 273	1.0	9 151	17.7	16.8	2.6
Partnership or corporation -----	6 339	1.0	345	69.5	5.2	3.4
Other -----	242	2.1	72	(H)	23.0	17.8
Farms by tenure of operator:						
Full owners -----	29 242	.9	7 173	19.1	19.7	3.2
Part owners and tenants -----	22 612	1.1	2 395	28.2	9.6	2.4
Part owners -----	17 572	1.1	1 349	35.5	7.1	2.3
Tenants -----	5 040	1.3	1 046	42.8	17.2	6.1
Operators by place of residence:						
On farm operated -----	36 678	.9	4 323	22.3	10.5	2.2
Not on farm operated -----	10 223	1.1	2 091	31.2	17.0	4.4
Not reported -----	4 953	1.0	3 154	25.5	38.9	6.3
Operators by principal occupation:						
Farming -----	27 376	1.1	2 526	28.7	8.4	2.3
Other -----	24 478	1.0	4 494	21.8	15.5	2.9
Operators by sex:						
Male -----	47 914	1.0	8 848	18.1	15.6	2.5
Female -----	3 940	1.1	720	47.0	15.5	6.2
Operators by race:						
White -----	49 356	.9	5 756	19.6	10.4	1.9
Black and other races -----	2 498	1.6	1 264	43.4	33.6	9.9
Operators by years on present farm:						
4 years or less -----	5 040	1.1	1 658	33.3	24.8	6.4
5 years or more -----	35 164	1.0	3 636	26.0	9.4	2.2
Average years on present farm -----	21.0	1.4	13.7	31.3	(X)	(X)
Not reported -----	11 650	1.0	4 274	22.0	26.8	4.4
Average age of operator -----	54.7	1.4	55.6	17.3	(X)	(X)

Note: These estimates do not account for incorrectly classified farms or farms appearing more than once in the census and are subject to change in the 1992 Coverage Evaluation publication. See appendix C text for further explanation.

<sup>1</sup>Estimates are based on a sample survey conducted independently of census data collection.